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10/047,390	01/16/2002	Donn E. Albert	DEA-C-1	5307

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3313 W. Adams St.
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EXAMINER

ROSS, DANA

ART UNIT PAPER NUMBER

3722

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,390

Applicant(s)

ALBERT, DONN E.

Examiner

Dana Ross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 7, 8, 14-23, 25-32 and 34-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 7, 8, 14-23, 25-32 and 34-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This is a second office action, final rejection on Application No. 10/047,390 in response to the amendment filed on October 30, 2004.

It is noted that Applicant's amendment states to cancel claims 1-4, 6, 33 and 34. The claim listing submitted by Applicant shows that the following claims are cancelled: 1-4, 6, 9-13, 24, 33. For the purpose of this examination, claims 1-4, 6, 9-13, 24 and 33 are cancelled. Claim 34 is still listed in the listing of claims as being the "original" claim 34, and is not indicated as being cancelled in the listing of claims. The only independent claims are **new** claims 35, 36 and 37.

Specification

2. The objection to the specification is withdrawn due to Applicant's amendment filed July 29, 2003.

Drawings

3. The objection to the drawings is withdrawn due to Applicant's amendment to the specification filed July 29, 2003.

Claim Objections

4. Claims 28 are objected to because of the following informalities:

Claim 28, it appears should read "...wherein said cutter is located in **the** same plane...".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It can not be determined from the disclosure what is being claimed in claim 35, lines 9-14 which states:

1) "said means for attaching said means for transferring rotational movement *results in said cutting wheel turning in the same plane as said drive source;*"

2) " said means for transferring rotation movement from said external drive having an output shaft to a cutting wheel *results in said cutting wheel turning in a different plane of rotation from said drive source.*"

Examiner added the above italics. It is noted that these two limitations were previously claimed as dependent claims 3 and 4, respectively, each dependent on claim 2 as different embodiments of the invention.

It is not clear how these two limitations, which are contrary to each other, can be combined into one claim.

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 5, 7, 8, 14-23, 25-32 and 34-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As stated in the previous Office Action of 24 March 2003, the claims are generally narrative and indefinite, failing to conform with current U.S. practice.

Claim 5, it is not clear the dependency of claim 5. The claim currently reads "An assembly according to claim 11". For the purpose of this office action, claim 5 will be considered dependent on claim 35.

Claims 7 and 8, recite the limitation "said power source". There is insufficient antecedent basis for the limitation in the claim.

Claim 8 recites the limitation "said lathe". There is insufficient antecedent basis for the limitation in the claim.

Claims 14, 15 and 16 recite the limitation "said driven gear". There is insufficient antecedent basis for the limitation in the claim.

Claim 21 recites the limitation "said spacer" and "the cut". There is insufficient antecedent basis for the limitation in the claim.

Claims 22 and 23 recite the limitation "said angle grinder". There is insufficient antecedent basis for the limitation in the claim.

Claim 24 recites "a drive shaft"(line 2) and "a secondary drive shaft" (line 4) and further recites "said drive shaft in lines 5 and 6. It is unclear which drive shaft is being referenced.

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Claim 29 is currently listed as being dependent on claim 24, which has been cancelled. It is not clear what claim is the parent claim of claim 29. For purposes of this office action, it is deemed to depend from claim 37.

Claim 34, Applicants states in the amendment that claim 34 is cancelled, however claim 34 is still shown as an "original" claim. For the purpose of this exam, since the claim identifier does not state "cancelled", claim 34 will be considered pending, however further clarification is required.

Claim 35, line 3 states "means for attaching said housing to an external drive source" and line 9 states "said means for attaching said means for transferring rotational movement...". There is insufficient antecedent basis for the limitation of "said means for attaching" in the claim. It is not clear what is being claimed. It is not clear how the "cutting wheel turning in the same plane as said drive source", lines 10-11 can occur with the "cutting wheel turning in a different plane of rotation from said drive source", lines 13-14.

Claim 36, lines 6-7, recites the limitation "said means for transferring rotation movement from said output shaft". There is insufficient antecedent basis for the limitation in the claim. A "means for transferring rotational movement" **to** the "output shaft" has been claimed, but there is no antecedent basis for the means **from** the "output shaft". It is not clear what is being claimed.

Claim 36, line 9, recites the limitation "said cutter shaft" and "said driven gear". There is insufficient antecedent basis for the limitation in the claim.

Claim 37, line 11, recites the limitation "said grinder". There is insufficient antecedent basis for the limitation in the claim.

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Claim 37, lines 5 and 6, recite the limitation of “said drive shaft”. There is insufficient antecedent basis for the limitation in the claim. There are two drive shafts claimed prior to these occurrences. Examiner recommends distinguishing the two drive shafts as a “first drive shaft” and a “second drive shaft”.

Claim 37 should be reviewed by Applicant and amended for clarity. For example, lines 2-3 state “...a drive shaft extending from a power source having a drive shaft gear”. It is not clear from this wording if the power source has “a drive shaft gear”. Figure 5 of Applicant’s specification shows the drive shaft 240 with a drive shaft gear 245 on the opposite side of the drive shaft 240 from the power source (see disclosure, page 5, lines 10-17, for example).

The above is not meant to be all-inclusive. Due to the number of 35 USC 112 2nd Paragraph issues, Applicant is required to review all claims to ensure proper antecedent basis and general clarity for all claim terminology.

The claims will be examined as “best understood”.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 35, 36, 5, and 7, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,187,046 (Atherton). Atherton teaches a hand-held assembly for driving a rotating cutter comprising a housing 12 containing a drive shaft 52 extending from a power source having a drive shaft gear 18, first means for transferring rotational torque 90 degrees to a secondary drive shaft 72 which drives a rotating cutter and extending generally perpendicular to drive shaft 52 wherein the rotational torque is transferred to the secondary shaft 72 with a system of bevel gears 68, 70 with matching threads (col. 4, lines 30-35) and has a means for moving the power source in both the X and Y axes (fig. 7).

11. Claims 35, 7 and 8, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,664,917 (Judy). Judy teaches a rotating assembly for a lathe comprising a housing, means for attaching the housing to an external drive source and means for transferring rotational movement from the external drive having an output shaft to a cutting wheel wherein the means for transferring rotational movement results in the cutting wheel turning in the same plane as the drive source (fig. 11, col. 8, lines 31-54).

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12. Claim 37, 36, 35, 5, 7, 17, 26, 27, 29 and 31, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by US Pat. No. 1,361,377 (Forster). Forster teaches a grooving machine with a housing (see reference numbers 1 and 5) containing a first drive shaft with pinion 23 (fig. 3) which transfers rotation torque to a second drive shaft 17 which is laterally spaced the first drive shaft and extends generally parallel to the first drive shaft (fig. 3); bevel gear 16 on second drive shaft 17 which transfers rotational torque 90 degrees to a third drive shaft which turns the rotating cutter and extends generally perpendicular to the second drive shaft (fig. 3);

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 8, and 14-23, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,187,046 (Atherton).

Regarding claim 8, Atherton teaches a power source 10. It is notoriously well known in the art to move a power source in the X and Y directions, including with a lathe as is evidenced in Applicant's Disclosure, page 7, line 9 and figure 9 which shows a common wood lathe 400 with tool rest 414 which provides means for movement of a tool in two directions.

Regarding claim 14, Atherton teaches the use of bevel gears but does not teach the use of a toothed drive belt assembly.

Regarding claim 15, Atherton teaches gears made from metal (col. 4, lines 8-10).

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Regarding claim 16, Atherton teaches the cutter shaft and driven gear with matching threads (col. 4, lines 6-29)

Regarding claim 17, Atherton discloses a cutter which inherently has sharpened teeth (col. 4, lines 64-67).

Regarding claim 18, Atherton discloses the claimed invention except for the rake angle of the cutter. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a rake angle of about 2° to 5° for the purpose of having a precise cut with the cutter teeth, since it has been held that discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 19-21, Atherton teaches a spacer 23 to limit the cutting depth (col. 4, line 60 to col. 5, line 9).

Regarding claim 22, Atherton teaches the assembly includes a main housing and means for attaching a commercially available grinder to the housing wherein the drive gear has a means for engaging a drive shaft of the grinder (col. 7, lines 27-54). Atherton also teaches a first means for transferring rotational torque 90 degrees to a secondary drive shaft 72 which drives a rotating cutter and extending generally perpendicular to drive shaft 52 wherein the rotational torque is transferred to the secondary shaft 72 with a system of bevel gears 68, 70 (col. 4, lines 30-35).

Regarding claim 23, Atherton teaches mechanical fasteners and brace 82, 85, 86 (col. 4, lines 23-29).

Atherton teaches the use of bevel gears and does not teach the use of a toothed drive belt assembly (claim 14).

Regarding the type of drive (i.e. toothed drive belt assembly or a system of beveled gears) and whether the axis of the first, second or third shafts were parallel or perpendicular, it is noted that many types of gearing, including toothed drive belt and beveled gears, are extremely well-known in the art for the purpose of transmitting a rotation from a driving member to an output or driven member, and furthermore, it is noted that each of these types of arrangements are known functional equivalents that each search to perform the function of transmitting such a rotation from the drive member to the output member. Additionally, it is noted that the selection of one known functional equivalent over another is considered to be within the level of ordinary skill in the art. As evidence of the well-known use of toothed belts to drive two shafts, Applicant is referred to US Pat. No. 5,623,858 (Birkstrand), which teaches the use of toothed belt 56 (col. 4, lines 1-19, fig. 3) and US Pat. No. 5,215,323 (Cowan), which discloses a belt assembly for transferring torque between two shafts (fig. 3, for example).

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever known type torque transfer means was desired or expedient, including bevel gears or toothed drive belt, because Applicant has not disclosed that the use of one type of assembly over another, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with whatever type of torque transfer system was desired, because the salient function of the rotation transmission from the drive motor to the driven tool shaft is present no matter which type of torque transmission system is used.

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15. Claims 25-32, 34 and 37, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,187,046 (Atherton) in view of U.S. Pat. No. 6,398,679 (Brown)

Regarding claim 37 Atherton teaches an assembly for driving a rotating cutter comprising a housing 12 containing a drive shaft 52 extending from a power source having a drive shaft gear 18, first means for transferring rotational torque 90 degrees to a secondary drive shaft 72 which drives a rotating cutter and extending generally perpendicular to drive shaft 52. Atherton also teaches the use of bevel gears (col. 4, lines 30-37), the cutter spaced from the power source (fig. 1), the cutter in the same plane as the power source (fig. 1), the power source electric (col. 4, lines 1-5). Atherton also teaches a first means for transferring rotational torque 90 degrees to a secondary drive shaft 72 which drives a rotating cutter and extending generally perpendicular to drive shaft 52 wherein the rotational torque is transferred to the secondary shaft 72 with a system of bevel gears 68, 70 (col. 4, lines 30-35).

Regarding claim 25, Atherton teaches the use of bevel gears.

Regarding claims 26 and 30, discloses the use of two shafts with bevel gears.

Regarding claim 27, Atherton teaches the cutter spaced from the power source (fig. 1).

Regarding claim 28, Atherton teaches the cutter in the same plane as the power source (fig. 1).

Regarding claim 29, Atherton teaches the power source electric (col. 4, lines 1-5).

Regarding claims 31 and 32, means for transferring rotational torque 90 degrees to a secondary drive shaft 72 which drives a rotating cutter and extending generally perpendicular to

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drive shaft 52 wherein the rotational torque is transferred to the secondary shaft 72 with a system of bevel gears 68, 70 (col. 4, lines 30-35).

Atherton does not teach an intermediate drive shaft between the drive shaft 52 and drive shaft 72 and parallel to drive shaft 52 (claim 37), the use of a drive belt (claim 25), the third shaft with a system of bevel gears (claim 26) and the third shaft with a belt assembly (claim 30).

Brown teaches a generic variable transmission for use with rotary tools (see col. 6, lines 49-51, for example), the variable transmission including a belt 14 connecting a first drive shaft 12 and a second drive shaft 44 in parallel with the first drive shaft (col. 4, lines 35-47, for example).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the tool as taught by Atherton to include the dual drive continuously variable transmission as taught by Brown for the purpose of transferring torque with very low power loss to due an advantageously coupling of components and synchronous driving of the belt systems.

16. Claims 18, 25, 28, 30, 32 and 34, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 1,361,377 (Forster).

Foster teaches the use of toothed gears 18 and 23 to transfer torque between the first and second drives.

Regarding the plane of the cutter and "power source", it is noted that a plane has not been defined with any limitations, and therefore any plane that passes through the "cutter" and "power source" would meet the limitation of claim 28.

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Forster does not disclose the rake angle of the cutter (claim 18) or the use of a tooth belt drive assembly (claim 25 and 30).

Regarding the rake angle, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a rake angle of about 2° to 5° for the purpose of having a precise cut with the cutter teeth, since it has been held that discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233. It is further noted that the determination of the rake angle of a cutter is a function of the machining process desired or expedient and it would have been an obvious matter of design choice to a person of ordinary skill in the art to choose whatever rake angle was needed for the particular machining process desired, because Applicant has not disclosed that a rake angle of "about" 2° to 5° provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the exchangeable cutter of Forster because it is well known in the art to choose the cutter needed, including the rake angle, based on the desired cutting shape and function.

Regarding the type of drive (i.e. toothed drive belt assembly, toothed gears or a system of beveled gears), it is noted that many types of gearing, including toothed drive belt and beveled gears, are extremely well-known in the art for the purpose of transmitting a rotation from a driving member to an output or driven member, and furthermore, it is noted that each of these types of arrangements are known functional equivalents that each search to perform the function of transmitting such a rotation from the drive member to the output member. Additionally, it is noted that the selection of one known functional equivalent over another is considered to be within the level of ordinary skill in the art.

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As evidence of the well-known use of toothed belts to drive two shafts, Applicant is referred to US Pat. No. 5,623,858 (Birkestrand) which teaches the use of toothed belt 56 (col. 4, lines 1-19, fig. 3) and US Pat. No. 5,215,323 (Cowan), which discloses a belt assembly for transferring torque between two shafts (fig. 3, for example).

Therefore, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have used whatever known type torque transfer means was desired or expedient, including bevel gears or toothed drive belt, because Applicant has not disclosed that the use of one type of assembly over another, nor even the parallel or perpendicular direction of the drive and driven shafts, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with whatever type of torque transfer system was desired, with the drive and driven shafts at whatever angle was desired, because the salient function of the rotation transmission from the drive motor to the driven tool shaft is present no matter which type of torque transmission system is used or at what angle it is located with respect to the driven tool shaft.

Response to Arguments

17. Applicant's arguments filed 29 July 2003 with respect to the claim have been considered but are moot in view of amended and new claims and the new ground(s) of rejection.

However, to expedite prosecution, Examiner will address several issues.

Applicant asserts that Atherton does not disclose the use of the cutter in a lathe as called for in claim 37, or a lathe having means to move the power source in both the X and Y axes as claimed in claim 8. It is noted that a lathe has not been claimed in newly added claim 37. Claim 8, as currently amended, has placed no structural limitations on the relationship between the "power source" and the claimed lathe. It is not clear in claim 8, as currently written, if a lathe is being claimed, or if the intended use of the lathe as a means to move the "assembly" (of claim 35) or a "power source" (which has no claimed limitations) is being claimed. However, it is noted that a lathe that moves a tool in the X and Y-axes is well known in the art (see above claim rejections).

Applicant asserts that Atherton does not disclose use of a cutter having a cutter shaft and driven gear having matching left-hand threads, which tend to tighten said driven gear onto said cutter shaft during operation of said cutter shaft. Applicant is referred to figure 1 of Atherton which shows the gear train 18 with first bevel gear 68 and second bevel gear 70. This figure expressly discloses "matching threads" in that the design shows that the threads are matching, or else the turn of the first bevel gear would loosen the 2nd bevel gear (and vice versa).

Applicant asserts that Atherton does not disclose the bevel gear structure of claim 37 and the claims dependent on it. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without

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specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Ross whose telephone number is 571-272-4480. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dmr


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